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# Paroecobius wilmotae, a new genus and species of spider from the Okavango Delta, Botswana (Araneae: Oecobiidae: Oecobiinae)

by

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## SYNOPSIS

*Paroecobius wilmotae* gen. n., sp. n. is described from Xugana island in the central northern region of the Okavango Delta in Botswana. *Paroecobius* is most closely related to the genus *Oecobius* Lucas, 1846.

## INTRODUCTION

Xugana (19°04'S, 23°03'E) is one of the many small islands in the central northern region of the Okavango Delta, commonly known as the Okavango Swamps. The arachnid fauna of this region has only begun to be sampled recently due to its general inaccessibility. The establishment of a safari camp on Xugana a few years ago has provided a convenient springboard for exploration.

All the types of *Paroecobius wilmotae* were found on white outside walls of buildings at Xugana. As several species of *Oecobius* are well known synanthropes, one should not discount altogether the possibility that *P. wilmotae* was introduced to Xugana with building materials originating from other parts of Botswana. *P. wilmotae* should therefore at this stage not be considered as endemic to the Okavango Delta, but possibly as endemic to Botswana and perhaps also Zimbabwe and Zambia. One should also remember, that these very small spiders are much more easily spotted on a white wall than on vegetation and other natural backgrounds.

Besides *Paroecobius* and *Oecobius*, *Platoecobius* Chamberlain & Ivie, 1935 [monotypic with *Platoecobius floridanus* (Banks, 1893)] is the only other genus described in Oecobiinae. The type locality of *P. floridanus* is Lake Worth, Florida and the only other published localities are Okefinakee Swamp, Georgia and South Carolina in the United States of America. Should *P. wilmotae* eventually be found to be truly endemic to the Okavango Swamps, it is thought that an ecological similarity with *P. floridanus* should be considered as convergence since these two species are morphologically too divergent to be congeneric.

Morphological terminology used here follows that of Shear (1970), Shear & Benoit (1974) and Baum (1973). Colour descriptions are given using ISCC-NBS Colour Designation (Kelly & Deane, 1965).

## Family Oecobiidae Blackwall, 1862

## Subfamily Oecobiinae*

## Genus **Paroecobius** gen. n.

*Derivation*. παϱα (Gr.) = close to, near + *Oecobius*

*Gender*. Masculine

*Type species*. *Paroecobius wilmotae* sp. n. by present designation.

### Diagnosis

*Paroecobius* can be separated from the other two genera in the subfamily by the following combination of characters. Eyes (Figs 2 & 3): AME dark, with a black ring on cuticular base, all other eyes opalescent; AME the largest in size, followed by the PME; ALE ⩾ PLE while both are much smaller than either AME or PME; anterior row of eyes slightly recurved in relation to the anterior margin of the carapace, while the posterior row is very strongly recurved (semi-circular); centres of PLE situated on the same transverse axis as that passing through the centres of AME; PME subtriangular in outline, all other eyes round. Calamistrum of females in a single row (5–8 bristles) situated in proximal half of metatarsus IV; males without a calamistrum. Anterior region of epigynal plate with a blind transverse invagination (Fig. 6).

### Remark

Chamberlain & Ivie (1935: 267) list the presence of a double row of bristles in the calamistrum as a diagnostic character for the Oecobiinae. The presence of only one row in *Paroecobius* should be taken into consideration in future diagnoses of the subfamily.

### Key to the genera of Oecobiinae of the World

1 Eyes: centres of PLE on the same transverse axis as that passing through the centres of AME; ALE, PLE and PME opalescent; a dark or black ring present at cuticular base of AME only. Calamistrum of females in a single row .......................................... **Paroecobius** gen. n.

– Eyes: centres of PLE distinctly posterior to the axis passing through centres of AME; only ALE and PME opalescent; AME and PLE either completely or partially encircled by black or dark rings at their cuticular base. Calamistrum of females in two rows .......................................... 2

2 Tibia I, between six to seven times longer than wide. Calamistrum running two-thirds the length of metatarsus IV .................. **Oecobius** Lucas

– Tibia I about four times longer than wide; calamistrum running entire length of metatarsus IV ...................... **Platoecobius** Chamberlain & Ivie

### **Paroecobius wilmotae** sp. n.

*Derivation*. Named in honour of Ursula Wilmot who has contributed much to the collecting and exploration of the Okavango Swamps arachnid fauna.

*Diagnosis*. See genus diagnosis above.

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* No definitive reference could be found to the original description of this subfamily. Shear (1970: 130) attributes first description to Chamberlain & Ivie, 1935, while Bonnet (1958: 3130) cites Petrunkevitch, 1928.

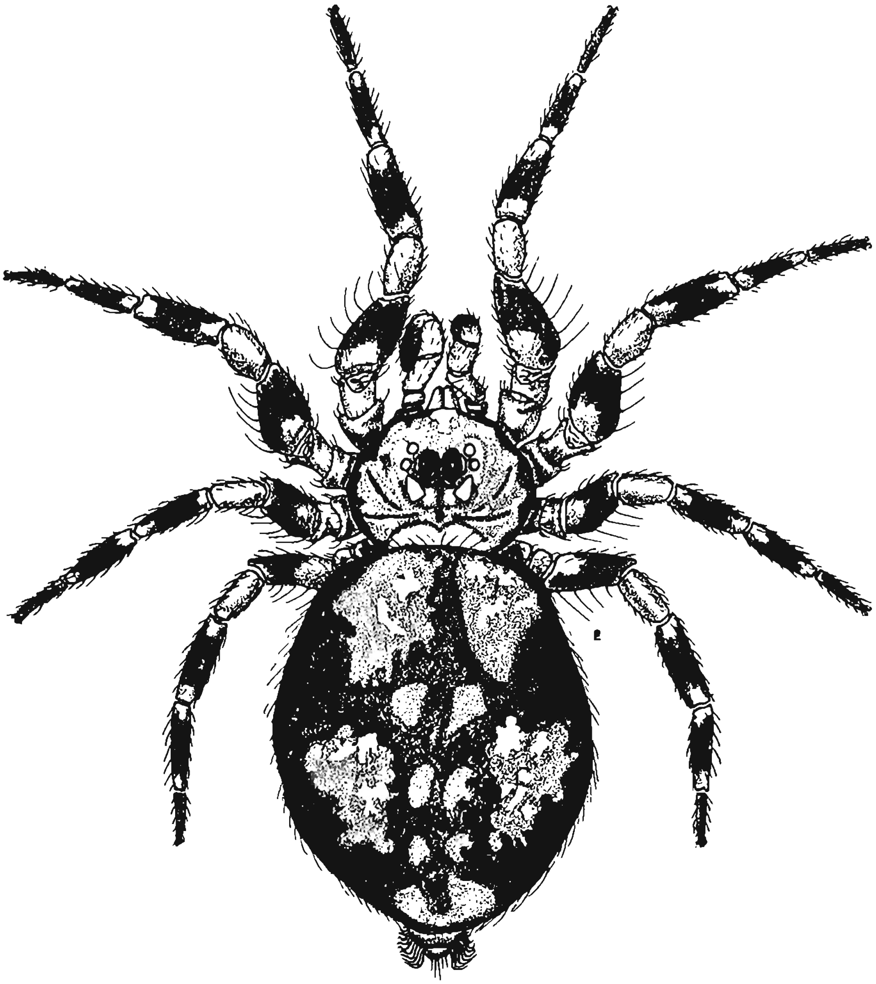
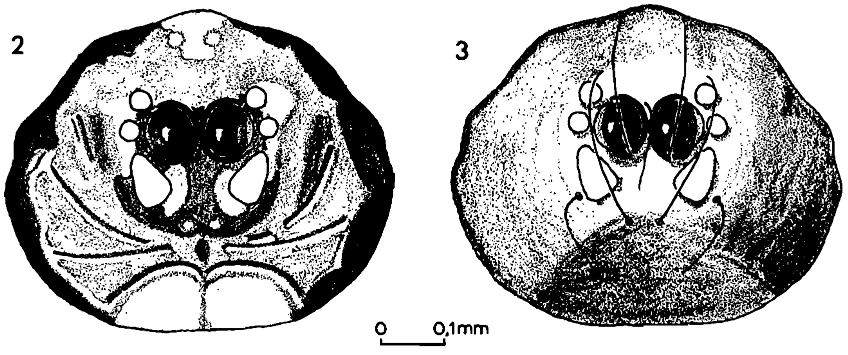


Fig. 1. *Paroecobius wilmotae* sp. n. ♀ holotype. Magnified 35×.

*Description.* The following description is based on the adult female holotype unless otherwise indicated.

Colour. Dorsal colour patterns as in Fig. 1. Ventral and lateral colour patterns: legs as for dorsal surfaces; sternum with margins lightly infuscated; epigynal plate surrounded by light and dark markings as in Fig. 6; abdomen, ventrally, with a large sub-pentagonal pale area delineated laterally and posteriorly by infuscated surfaces. Non-infuscated surfaces of legs and pedipalps light orange-yellow No. 70. Sternum, subpentagonal pale area of abdomen, spinnerets and anal tubercle pale orange-yellow No. 73. All dark patterns described above and illustrated in figures varying from light greyish yellowish brown No. 79 to dark greyish brown No. 81. Pale areas of carapace moderate orange-yellow No. 71. Light areas of abdomen in Fig. 1 light yellowish brown No. 76, with irregularly interspersed



Figs 2–3. *Paroecobius wilmotae* sp. n., ♀ holotype, dorsal aspect of carapace. 1, showing distribution of dark colour patterns but not form; 2, showing overall form and the distribution of setae, but with colour patterns omitted.

white patterns, white No. 263. Colour shades and distribution of colour patterns exhibit a wide range of variation in paratypes.

Carapace. Dome shaped, with AME and PME situated approximately on the rounded apex of the dome. AME orientated in a slightly dorso-lateral direction. Surfaces of ALE, PLE and PME almost flush with cuticular surface of carapace. AME semi-spherical in shape. Carapace outline as in Figs 1–3. Eye distribution as in Figs 1–3 and generic diagnosis.

Sternum. Subcordate in outline.

Setation. With no spine-like setae. Abdomen and appendages setose as in most species of *Oecobius*. Carapace lacking short setae but with seven long setae in ocular region as in Fig. 3. Sternum moderately setose. Vestiture of spinnerets, anal region and tubercle as in genus *Oecobius*.

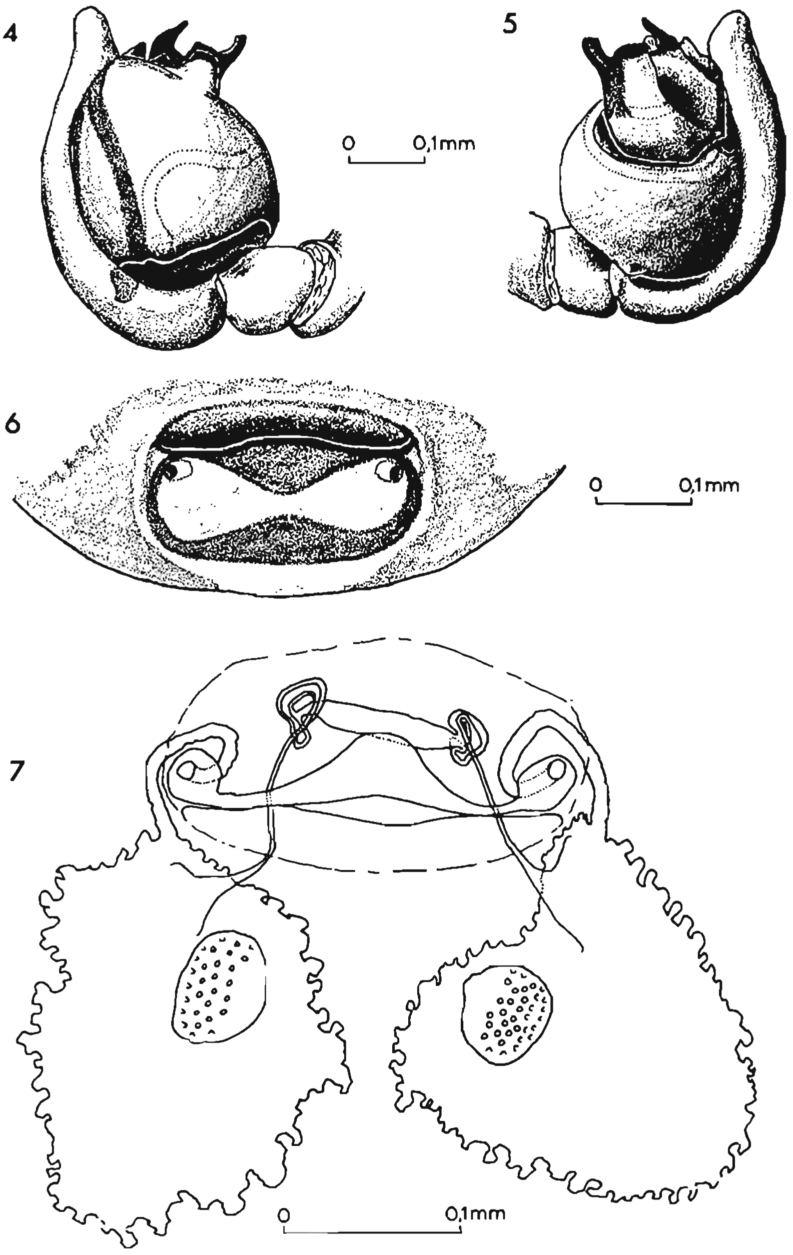
Genitalia. Female as in Figs 6 & 7 and males as in Figs 4 & 5. Fig. 7 was drawn using an ordinary light microscope and a macerated preparation (10% KOH). Use of phase-contrast microscopy, as done by Baum (1973), would most probably reveal greater details of the internal genitalia.

*Variation.* Males are slightly smaller than females and lack calamistra while their cribella are suppressed. Also see colour and colour pattern variation described above.

*Measurements.* As obtainable from Figs 1–7.

*Material examined.* BOTSWANA: Okavango Delta, Xugana island safari camp (19°04'S, 23°03'E). Holotype ♀, 20 November 1979, B. Lamoral (NM 13812, Type no. 2474). Paratypes: 9 ♀, 18–25 November 1980, B. Lamoral & U. Wilmot, (NM 13813, Type no. 2475); 5 ♂, ditto, (NM 13814, Type no. 2475); 3 subadult ♂, ditto, (NM 13815, Type No. 2475); 21 juveniles, ditto, (NM 13816, Type no. 2475).

Paratypes drawn from the above series have been deposited in the following institutions: 1 ♀, 1 ♂, Musée royal de l'Afrique centrale, Tervuren, Belgium; 1 ♀ British Museum (Natural History), London, England; 1 ♀, Laboratoire des



Figs 4–7. *Paroecobius wilmotae* sp. n. 4–5, male paratype right palpi; 4, outer aspect; 5, inner aspect. 6, ♀ holotype, uncleared epigynum, ventral aspect. 7, ♀ paratype, cleared epigynum, ventral view. Scales: Figs 4–5, upper centre; 6, centre right; 7, lower centre.

Arthropodes, Museum national d'Histoire naturelle, Paris, France; 1 ♂, 1 ♀, American Museum of Natural History, New York, U.S.A.

*Bionomics*. All the types were collected in daytime from inside shallow crevices covered with a silk hammock, usually open at two ends. All were inactive at the time of capture. A few specimens seen moving around at night could not be caught. This species is thus presumed to be nocturnal.

## ACKNOWLEDGEMENTS

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